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HOW TO

IDENTIFY AND CONTROL PALES WEEVIL IN CHRISTMAS TREE PLANTATIONS

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North Central Forest Experiment Station
Forest Service - U.S. Department of Agriculture

The pales weevil, *Hylobius pales*, harms the appearance of Christmas trees in northern plantations by causing branch tip discoloration and crooking. Adult weevils are drawn in from surrounding areas by the odor of each year's recently cut pine stumps. New stumps are available for weevil colonization each year because Christmas trees are cut out of a plantation for several years in a row. The longer the cutting cycle, the more damage there is. Severe injury can occur on trees of all ages, from newly planted seedlings to those ready for harvest. The weevils prefer eastern white pine but also attack Scotch pine and Douglas-fir.



Pales weevil adults are oblong, 6-12 mm long, and robust, with scattered yellow patches on their backs and reddish-brown to black snouts. They feed primarily at night, and spend the day beneath the needle litter near the tree base or near tree stumps. The weevils are active from mid-April until autumn when they enter the soil or litter to hibernate.





Egg laying begins in late May and continues until mid-August. The female deposits eggs singly in cavities chewed in the inner bark of the stump below ground. Larvae emerge about 10 days later and tunnel in the inner bark down into the roots. After 9 weeks, the larvae construct cells in the wood and pupate.



IDENTIFICATION

On live trees, look for:

- Reddened tips of shoots. These flags, caused by adult feeding, occur anywhere on the tree.



- Bark removed in irregular patches on the bare branches behind the flagged shoots. Pitch may be exuding or the scars may be partially callused on these wounds.

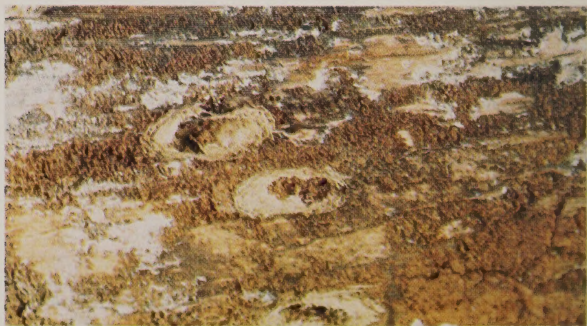


On fresh stumps, look for:

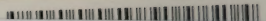
- White pupae or white, C-shaped larvae with amber heads beneath the bark at the base of the roots. Oldest ones are about 15 mm long.
- Tunnels in the wood that run along the grain. Larvae or pupae may be in these tunnels.

Do not confuse the pales weevil with other insects that inhabit stumps.

The northern pine weevil, *Pissodes approximatus*, commonly infests the root cellar of pine stumps. This weevil's shallow tunnels and small oval pupal cells plugged with wood slivers are usually found above pales weevil tunnels. Pine weevil adults also feed on pine shoots but less than pales weevils do.



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Longhorn and metallic boring beetles, not the pales weevil, make holes on top of older stumps. These insects will not harm Christmas trees.

PREVENTION

Eliminate the weevils' breeding material by removing new stumps before late spring. Mechanical or chemical stump treatments are usually feasible in small plantations.

Or, when harvesting you can leave one whorl of live branches on the stump to keep it alive and unattractive to the weevils. These stumps can still be destroyed following the harvest cycle or new Christmas trees (tip-ups) can be grown from the dominant branch on each stump. If you grow tip-ups, take care to avoid other pests such as pine needle scale, pine root tip weevil, and lophodermium needlecast.

Never plant seedlings near stumps, unless the stumps are 2 or more years old and unable to support new infestations.

CONTROL

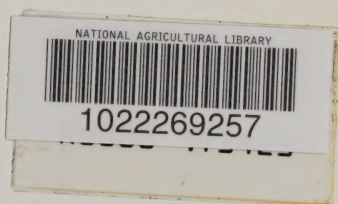
You may not need to control the pales weevil if the infestation is light. The unsightly brown needles caused by adult feeding commonly fall off by the time the trees are harvested. Heavy feeding, however, can deform trees and kill branch tips, degrading the tree's value by causing holes in the crown.

When necessary, you can use a few pesticides that are registered for foliar application, stump treatment or seedling protection.

Apply the appropriate insecticides when the adult weevils are most active, usually during the first week of May. Drench the stumps and nearby soil so that adults coming to lay eggs and those emerging from the soil and litter come in contact with the insecticide. In the fall the adult weevils are found near the base of live trees rather than near the stumps. Apply insecticide to the trees in late August or early September. Spraying during warm evenings when the weevils move onto the trees will increase the treatment's effectiveness.

Jeffrey A. Corneil
Forest Entomologist

Louis F. Wilson
Principal Insect Ecologist
East Lansing, Michigan



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